

CLAIMS

We Claim:

1. An aqueous ink-jet ink composition for printing on offset media comprising:

- 5 a) an ink colorant;
- b) an effective amount of at least one surfactant;
- and
- c) an effective amount of at least one aprotic polar solvent wherein the solvent is comprised of molecules
- 10 having a molecular weight from 40 to 1500.

2. An aqueous ink-jet ink composition as in claim 1 further comprising an effective amount of a non-aprotic polar solvent.

3. An aqueous ink-jet ink composition as in claim 1 wherein the aprotic polar solvent is an amide.

4. An aqueous ink-jet ink composition as in claim 1 wherein the aprotic polar solvent is selected from the group consisting of formamides, methylformamides, methylacetamides, acetonitrile, dimethyl sulfoxide, sulfolane, dimethyl formamide, isopropyl formamide, dibutyl formamide, methyl acetamide, dimethyl acetamide, ethylacetamide, isopropyl acetamide, propanenitrile, dimethyl imidazolidin-2-one, tetramethylurea, cyclohexanone, cyclopentanone, tetrahydrofuran, fluorad, acetyl ethanolamine, methyl propionamide, dimethyl propionamide, isopropyl propionamide, ethyl propionamide, diethyl propionamide, ethyl butanamide, propyl butanamide, butyl butanamide, and combinations thereof.

5. An aqueous ink-jet ink composition as in claim 1 wherein the aprotic polar solvent is present at from 5% to 40% by weight.

5 6. An aqueous ink-jet ink composition as in claim 1 wherein the surfactant is present at from 1% to 10% by weight.

7. An aqueous ink-jet ink composition as in claim 6
10 wherein the surfactant is an ionic surfactant.

8. An aqueous ink-jet ink composition as in claim 6 wherein the surfactant is a non-ionic surfactant.

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15 9. An aqueous ink-jet ink composition as in claim 6 wherein the surfactant is selected from the group consisting of ethoxylated octylphenols, alkyl phenoxypoly(ethyleneoxy)ethanols, silicone glycol copolymers, polyalkylene oxide-modified
20 polydimethylsiloxanes, ethoxylated tetramethyl decyldiols, secondary alcohol ethoxylates, ethoxylated trimethylnonanols, polyoxyethylene ethers, ethylene oxide/propylene oxide copolymers, fluorosurfactants, and combinations thereof.

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10. An aqueous ink-jet ink composition as in claim 1 further comprising an effective amount of a second co-surfactant.

30 11. An aqueous ink-jet ink composition as in claim 1 wherein the aprotic polar solvent is from 5 to 20 Debye (D).

12. An aqueous ink-jet ink composition as in claim 1 wherein the ink colorant is one or more dyes wherein the total amount of dye present is from 2% to 6% by weight.

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13. An aqueous ink-jet ink composition as in claim 1 wherein the ink colorant is one or more pigments wherein the total amount of pigment present is from 2% to 6% by weight.

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14. An aqueous ink-jet ink composition as in claim 1 wherein the ink colorant is one or more macro-molecular chromophore wherein the total amount of macro-molecular chromophore present is from 2% to 6% by weight.

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15. An aqueous ink-jet ink composition as in claim 1 having two polar aprotic polar solvents present in the composition.

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16. An aqueous ink-jet ink composition for printing on offset media comprising:

a) from 2% to 6% of an ink colorant by weight;

b) from 1% to 10% of surfactant;

c) from 5% to 40% of aprotic polar solvent comprised of molecules having molecular weights from 40 to 1500; and

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d) from 1% to 40% of non-aprotic polar solvent comprised of molecules having molecular weights from 40 to 1500.

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17. An aqueous ink-jet ink composition as in claim 16 wherein the surfactant is a non-ionic surfactant.

18. An aqueous ink-jet ink composition as in claim 16 wherein the aprotic polar solvent has a polarity value from 5 to 20 Debye (D).

5 19. An aqueous ink-jet ink composition as in claim 16 wherein the ink colorant is comprised of macro-molecular chromophores.

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